Abstracts

Theoretical and Experimental Characteristics of Single V-Groove Guide for X-Band and 100 GHz Operation (Comments)

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In the above paper, the key question is to derive the scaling factor, h(x, y), which is necessary for the determination of the propagation characteristics of single V-groove guide. The authors use a conformal mapping technique to obtain it. Since the cross section of the V-groove guide is symmetrical, one quarter is considered only, which is shown in Fig. 15. According to the symmetrical principle of the conformal mapping, the transformed cross section is also one quarter of the parallel-plate waveguide which is filled with a nonisotropic and nonhomogeneous medium, and the scaling factor h(x, y) should be symmetrical about both x axis and y axis. Therefore, the transformed cross section which is plotted in the complex Z plane in Fig. 15 should be modified. In the Z plane, it should be plotted in the region where 0 <= x <= c and y >= 0, and a series of conclusions (given in Appendix A, D and Section II-B-1) concerning it should also be modified respectively as follows.

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